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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,254	08/18/2003	Kevin Crather	CL1610USNA	4632

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E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER
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BODAWALA, DIMPLE N

ART UNIT	PAPER NUMBER
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1722

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/643,254	<b>Applicant(s)</b> CRATHER ET AL.	
	<b>Examiner</b> Dimple N. Bodawala	<b>Art Unit</b> 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12, 14, 16, 18, 20-22, 24, 26, 28-35, 39, 40 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14, 16, 18-22, 24, 26, 28-35, 39-40, and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

Claims 1-10,12,14,16,18-22,24,26,28-35,39-40, and 42 are pending.

In view of the amendment, filed on November 14<sup>th</sup>, 2006 following rejections are withdrawn from the previous office action, mailed on June 27<sup>th</sup>, 2006.

- Rejections of claims 1,10,12,14,16,18,20-22,24,26,30,32,36 and 38 under 35 U.S.C. 102 (b) over Guill (U S Patent No. 3,029,466).
- Rejection of claims 1, 36 and 38 under 35 U.S.C. 102 (b) over Poteet III (U S Patent No. 3,846,529).
- Rejection of claims 40 - 42 under 35 U.S.C. 103 (a) over Poteet III (U S Patent No. 3,846,529) in view of either Ribble et al. (U S Patent No. 5,429,788) or Kahlert et al. (U S Patent No. 4,639,423).

- Rejection of claims 2-9, 11, 13, 15, 17, 19, 23, 25, 27-29, 31, 33-35, 37, and 39 under 35 U.S.C. 103 (a) over Guill (U S Patent No. 3,029,466) in view of Nash (U S Patent No. 2,254,237).
- Rejection of claims 1-42 under 35 U.S.C. 112, Second paragraph.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 10, 12, 14, 16, 18, 20-22, 24, 26, 28-30, and 32 are rejected under 35 U.S.C. 102 (b) as being anticipated by Guill (U S Patent No. 3,029,466).

Guill ('466) discloses the housing having a wall and a cavity (Fig 1, B), at least two inlet port (Fig 1, #15, 53) in the wall of the housing for introducing material into the housing.

Guill ('466) discloses figure 1 which comprises the first inlet port (15) and the second inlet port (53) in the housing for introducing the material into the housing cavity, thus inherently disclosing the first port for containing a hydro gel forming suspension, and the second port for containing a biocatalyst as claimed in claim 1.

Guill ('466) discloses an extrusion die having a face (Fig 1, #22) with one or a plurality of extrusion holes (Fig 1, #23) through which the material can be extruded from the housing cavity, a cutting assembly (Fig 1) having at least one cutting blade (Fig 1, #36) that cuts the material into individual particles when the material exits the extrusion holes as the cutting blade moves across each extrusion hole, wherein the cutting blade is in close proximity with the face of the extrusion die and moves in a linear, rotating or reciprocating manner; the cutting assembly is rotatably mounted (Fig1, #32); the drive shaft is rotatably

mounted in the housing cavity (Fig 1 ); the extrusion die has a central opening and the drive shaft extends through the central opening of the extrusion die and wherein the cutting assembly is rotatably mounted on the drive shaft as it extends through the central opening (Fig 1) (See col.3 lines 62-75 through col.4 lines 1 - 16).

It further teaches that the extrusion holes are uniformly spaced apart on the face of the extrusion die (Fig 1), the extrusion holes are arranged in a circular array when the cutting assembly is rotatably mounted; the extrusion holes have a generally circular cross-section (Fig 1); the face of the extrusion die is treated with or is constructed from a material that has a high contact angle with the material, the material being selected from metals (Fig 1); the extrusion die is constructed from an insulating material selected from metals (Fig 1)., the cutting assembly is selected from pitched turbines (Fig 5); the system is heated by

at least one heating device (Fig 1 , #24); the heating device is selected from thermal mass heaters (Fig 1, #24) .

It further discloses the mixing device within the housing cavity is driven by the drive shaft (Fig 1), the mixing device within the housing cavity is driven by a rotatably mounted drive shaft and the extrusion die has a central opening through which the drive shaft extends and wherein the cutting assembly is rotatably mounted on the drive shaft where it extends through the central opening (Fig 1); a plurality of mixing blades (36') for mixing the quench fluid as the cutting assembly rotates in the quench fluid; the quench station further has an inclined surface for collecting the particles and at least one additional collection reservoir for collecting the quench fluid as the quench fluid exits the quench station, wherein the quench fluid is recycled back from the additional collection reservoir into the quench station after the hydro gel

particles are collected on the inclined surface (Fig 1)  
(See col.5 lines 13 - 55).

Applicant discloses the biocatalyst in the amended claims, as a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. (See MPEP ¶ 7.37).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action:

Claims 2-9,28-29,31,33-35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guill (U S Patent No. 3,029,466) in view of Nash (U S Patent No. 2,254,237).



Guill ('466) discloses all structural limitations as discussed above including extruding material through the apparatus and cutting the material. However, Guill fails to teach the feed and metering stations as well as transfer lines and mixing stations.

Nash ('237) discloses figure 1 with the feed station (32,42,72) for containing the material. Figure further comprises the first metering device (37), and the second metering device (48) having transfer lines (35,47) connected to the feed station, and a quench station containing quench fluid (Fig 1, #12); and also to the hydro gel forming particle apparatus for receiving material from the feed station and delivering it to the apparatus. It further teaches the metering device is a volumetric metering pump (Fig 1, #37 and #48).

Nash ('237) teaches a mixing device for mixing components before submitted to the apparatus (Fig 1, #78), the mixing device is part of the feed station and

part of the transfer line of the metering device;  
further comprising an additional feed station (Fig 1,  
#62) for containing fluid and a metering device (Fig 1,  
#68); and the internal pump within the housing cavity  
is a volumetric displacement pump.

It would have been obvious to one having ordinary  
skill in the art at the time of the Applicant's  
invention to have modified the invention of Guill with  
the features of Nash because such additional devices  
would be obvious and enable the structural limitation  
and function of producing the particles (See col.1  
lines 1 - 9).

### **New Ground of Rejection**

#### ***Claim Rejections - 35 USC § 103***

Claims 40 and 42 are rejected under 35  
U.S.C. 103(a) as being unpatentable over Guill (U S  
Patent No. 3,029,466) and/or Nash (U S Patent No.  
2,254,237) as applied to claims 1-10,12,14,16,18,20-  
22,24,26,and 28-35 above, and further in view of either

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Ribble et al. (U S Patent No. 5,429,788) or Kahlert et al. (U S Patent No. 4,639,423).

Guill ('466) and or Nash ('237) disclose all structural limitations as discussed above providing first and second feed station containing the material, and also cutting assembly. However, they fail to teach the method steps, which includes metering, mixing, extruding, and cutting the material.

Ribble ('788) discloses the method of producing the particle by providing the feed station (56), metering the suspension by a metering device having the transfer line (52) connected to the feed station and receiving the material therefrom into the apparatus.

Kahlert ('423) discloses the apparatus partially submerged in quench fluid (fig 1); the hydro gel forming suspension has a hydro gel solution and a biocatalyst; the biocatalyst being multi enzymes complexes (Col.4 lines 24-46).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Guill and/or Nash to provide the method steps as set forth by Ribble and Kahlert because such steps enable metering and the production of hydro gel particles including the biocatalysts and are found to be useful for production of particles.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-10,12,14,16,18-22,24,26,28-35,39-40, and 42 have been considered but are moot in view of the new ground(s) of rejection based on the new limitation of the amended claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dimple N. Bodawala whose telephone number


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is (571) 272-6455. The examiner can normally be reached on Monday - Friday at 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra N. Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DNB

  
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